1. A work support and management system for a working machine, which supports and manages work carried out by a working machine (1), said system comprising first storage means (47) for storing the state of a working region where said working machine (1) carries out the work;

second storage means (48) for storing the relationship between the state of said working region and a discriminative display method; and

display means (234, 237, 239) for displaying the state of said working region,

wherein said display means includes first processing means (S110, S114, S118, S122, S150-154) for obtaining discriminative display data by referring to the relationship stored in said second storage means on the basis of the state of said working region stored in said first storage means, and for displaying the state of said working region in a discriminative manner.

2. A work support and management system for a working machine, which measures and displays the three-dimensional position and state of a working machine (1), thereby supporting and managing work carried out by said working machine, said system comprising:

first storage means (47) for storing the state of said working region where said working machine (1) carries out the work;

second storage means (48) for storing the relationship between the state of said working region and a discriminative display method;

third storage means (41) for storing the three-dimensional position and state of said working machine; and

display means (234, 237, 239) for displaying the state of said working region,

wherein said display means includes first processing means (S110, S114, S118, S122, S150-154) for obtaining discriminative display data by referring to the relationship stored in said second storage means on the basis of the state of said working region stored in said first storage means, and for displaying the state of the working region in a discriminative manner, while displaying the three-dimensional position and state of said working machine in superimposed relation to the state of said working region based on the data stored in said third storage means.

3.   A work support and management system for a working machine, which supports and manages work carried out by a working machine (1), said system comprising:

first storage means (47) used for display and storing the state of said working region where said working machine (1) carries out the work;

second storage means (48) for storing the relationship between the state of said working region and a discriminative display method;

third storage means (44, 45, 46) used for arithmetic

operation and storing the state of said working region; and

display means (234, 237, 239) for displaying the state of said working region,

wherein said display means includes first processing means (S110, S114, S118, S122, S150-154) for obtaining discriminative display data by referring to the relationship stored in said second storage means on the basis of the state of said working region stored in said first storage means, and for displaying the state of said working region in a discriminative manner, and second processing means (S112, S116, S120, S124) for obtaining work data based on data stored in said third storage means and displaying the obtained work data.

4. The work support and management system for a working machine according to any one of Claims 1 to 3,

wherein said working region is represented in units of mesh (M) indicating a plane of a predetermined size, and said first storage means (47) stores the state of said working region per mesh; and

wherein said first processing means obtains the discriminative display data by referring to the relationship stored in said second storage means (48) on the basis of the state of said working region stored in said first storage means per mesh, and displays the state of said working region per mesh in a discriminative manner.

5. A work support and management system for a working machine, which measures and displays the three-dimensional position and state of a working machine (1), thereby supporting and managing work carried out by said working machine, said system comprising:

first storage means (47) used for display and storing, as the state of said working region where said working machine (1) carries out the work, at least one of the current state of said working region, the state of said working region before the start of the work, and a target value of the work;

second storage means (48) for storing the relationship between the state of said working region and a discriminative display method;

third storage means (41) for storing the three-dimensional position and state of said working machine;

fourth storage means (44) for storing the current state of said working machine;

fifth storage means (45 or 46) for storing at least one of the state of said working region before the start of the work and the target value of the work;

sixth storage means (43) for storing work data of said working machine; and

display means (234, 237, 239) for displaying the state of said working region,

wherein said display means includes selection means (S102-108) for selectively displaying a plurality of screens (A1-D1) corresponding to working processes, first processing

61

means (S110, S114, S118, S122) for, when any of said plurality of screens is selected, obtaining discriminative display data by referring to the relationship stored in said second storage means on the basis of the state of said working region stored in said first storage means, and displaying the state of said working region in a discriminative manner, and second processing means (S112, S116, S120, S124) for, when any of said plurality of screens is selected, obtaining the work data of the working region based on data stored in related one or more of said first, third, fourth and fifth storage means, displaying the obtained work data, and storing the obtained work data in said sixth storage means.

6. The work support and management system for a working machine according to Claim 5,

wherein said working region is represented in units of mesh (M) indicating a plane of a predetermined size, and said first, fourth and fifth storage means (47, 44, 45 or 46) stores the state of said working region per mesh; and

wherein said first processing means (S110, S114, S118, S122) obtains the discriminative display data by referring to the relationship stored in said second storage means on the basis of the state of said working region stored in said first storage means per mesh, thereby displaying the state of said working region per mesh in a discriminative manner, and said second processing means (S112, S116, S120, S124) obtains the work data per mesh based on the data stored in

related one or more of said first, third, fourth and fifth storage means, thereby displaying the obtained work data.

7. The work support and management system for a working machine according to Claim 5,

wherein said plurality of screens selectively displayed by said selection means (S102-108) includes a work plan screen (A1); and

wherein when said selection means (S102) selectively displays the work plan screen, said first processing means (S110) obtains the discriminative display data by referring to the relationship stored in said second storage means (48) on the basis of, among the data stored in said first storage means (47), data regarding at least one of the state of said working region before the start of the work and the target value of the work, thereby displaying at least one of the state before the start of the work and the target value of the work in a discriminative manner, and said second processing means (S112) computes and displays a target work amount based on the data stored in said fifth storage means (45 or 46), and stores the target work amount in said sixth storage means (43).

8. The work support and management system for a working machine according to Claim 5,

wherein said plurality of screens selectively displayed by said selection means (S102-108) includes a during-work screen (B1); and

wherein when said selection means (S104) selectively displays the during-work screen, said first processing means (S114) obtains the discriminative display data by referring to the relationship stored in said second storage means (48) on the basis of, among the data stored in said first storage means (47), data regarding the current state of said working region, thereby displaying the current state of said working region in a discriminative manner, while displaying the position and state of said working machine in superimposed relation to the state of said working region based on the data stored in said third storage means (41), and said second processing means (S116) computes and displays the data regarding the position and state of said working machine based on the data stored in said third storage means (41).

9.   The work support and management system for a working machine according to Claim 5,

wherein said plurality of screens selectively displayed by said selection means (S102-108) includes an after-work screen (C1); and

wherein when said selection means (S106) selectively displays the after-work screen, said first processing means (S118) obtains the discriminative display data by referring to the relationship stored in said second storage means (48) on the basis of the data stored in said first storage means (47), thereby displaying the state of said working region after the work in a discriminative manner, and said second

64

processing means (S120) computes and displays an amount of
the work made on that day based on,
among the data stored in said fourth storage means (44), the
data regarding the current state of said working region, and
stores the amount of the work made on that day in said sixth
storage means (43).

10.   The work support and management system for a working
machine according to Claim 5,

    wherein said plurality of screens selectively displayed
by said selection means (S102-108) includes a total-work
completion screen (D1); and

    wherein when said selection means (S108) selectively
displays the after-work screen, said first processing means
(S122) obtains the discriminative display data by referring
to the relationship stored in said second storage means (48)
on the basis of, among the data stored in said first storage
means (47), data regarding the current state of said working
region, thereby displaying the state of said work region
after the completion of total work, and said second
processing means (S124) computes and displays a total amount
of completed work based on the data stored in said fourth
storage means (44) and the data stored in said fifth storage
means (45), and stores the quality management information in
said sixth storage means (43).

11.   The work support and management system for a working
machine according to any one of Claims 1 to 6,

wherein said second storage means (48) stores the discriminative display method in color-coded representation; and

wherein said first processing means (S110, S114, S118, S122) displays the state of said working region in a color-coded manner.

12. The work support and management system for a working machine according to any one of Claims 1 to 11, wherein said working machine is a hydraulic excavator (1), and the state of said working region is represented by landform of said working region.

13. The work support and management system for a working machine according to any one of Claims 1 to 11, wherein said working machine is a mine sweeping machine (101), and the state of said working region is represented by the presence or absence of mines buried in said working region and the mine type.

14. The work support and management system for a working machine according to any one of Claims 1 to 11, wherein said working machine is a ground improving machine (201), and the state of said working region is represented by positions where a solidifier is loaded and an amount of the loaded solidifier.